

JACKIE COLE PROJECT MANAGER

December 20, 2018

Mr. Stephen Wolfe On-Scene Coordinator U.S. Environmental Protection Agency, Region 5 25063 Center Ridge Road Westlake, Ohio 44145

Subject: Oil Pollution Act Removal Report, Revision 2

Warren Steel Holdings Removal Site EPA Contract No.: EP-S5-13-01

Technical Direction Document No.: S05-0004-1807-203

Document Tracking No.: 2517B

Dear Mr. Wolfe:

The Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) is submitting this report, for your review and comment, that summarizes the Oil Pollution Act (OPA) removal conducted at the Warren Steel Holdings Site located at 4000 Mahoning Avenue in Warren, Trumbull County, Ohio, between August 27, 2018 and September 27, 2018. Tetra Tech addressed your comments on Revision 1 of the report received on December 14, 2018.

If you have any questions regarding this report, please contact me at Jackie.cole@tetratech.com.

Respectfully,

Jackie Cole Project Manager

Enclosure

cc: Sam Chummar, EPA Project Officer (letter only)

Kevin Scott, Tetra Tech Program Manager

TDD File

OIL POLLUTION ACT REMOVAL REPORT WARREN STEEL HOLDINGS REMOVAL SITE WARREN, TRUMBULL COUNTY, OHIO

Revision 2

Prepared for

U.S. Environmental Protection Agency

Emergency Response Branch Region 5 25063 Center Ridge Road Westlake, Ohio 44145



Submitted by

Tetra Tech, Inc.

6777 Engle Road, Suite L Middleburg Heights, Ohio 44130

EPA Contract No.: EP-S5-13-01

Technical Direction Document No.: S05-0004-1807-203

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December 20, 2018

Prepared by

Jackie Cole Project Manager Approved by

Kristine Schnoes START QC Reviewer

Kristine K. Schnoes

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) tasked Tetra Tech, Inc. (Tetra Tech) to provide support

during an Oil Pollution Act (OPA) removal action at the Warren Steel Holdings Site (the site) located in

Warren, Trumbull County, Ohio. This work was assigned under Superfund Technical Assessment and

Response Team (START) Contract No. EP-S5-13-01, Technical Direction Document (TDD) No. S05-

0004-1807-203.

As part of the initial Warren Steel Holdings Comprehensive Environmental Resource, Compensation, and

Liability Act (CERCLA) time-critical removal action, START prepared a site-specific Emergency

Contingency Plan and the Emergency and Rapid Response Services (ERRS) contractor, Environmental

Restoration, LLC (ER), submitted a Health and Safety Plan (HASP) (Tetra Tech 2018, ER 2018).

Following approval by EPA, work during the subsequent OPA removal action was performed in accordance

with these plans, along with the START Quality Assurance Project Plan (QAPP), Revision 3, dated June

28, 2016 (Tetra Tech 2016).

This removal report is organized into the following sections:

• 1.0 Introduction – describes the objectives and scope of the removal action and describes the site

and its history.

• 2.0 Removal Action Activities – describes the activities that occurred during the removal action,

including oversight and documentation and waste draining, dismantling, and removal.

• 3.0 Removal Summary – summarizes the time-critical removal

• 4.0 References – lists references used within the removal report.

In addition, this removal report contains five appendices. Appendix A provides figures for this report.

Appendix B provides representative photographs of the site conditions and removal activities conducted at

the site. Appendix C provides field notes recorded by START personnel. Appendix D provides waste

disposal documentation. Information on environmentally-preferred practices used during this project are

included in Appendix E.

1.1 SITE LOCATION

The site is located at 4000 Mahoning Avenue in Warren, Trumbull County, Ohio. Figure 1 in Appendix A

illustrates the location of the site on the U.S. Geological Survey (USGS) 7-Minute Topographic Quadrangle

for Trumbull County, Ohio. The geographic coordinates at the center of the site are 41°16'19.3" north

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Warren Steel Holdings Site OPA Removal Report, Revision 2 December 20, 2018 latitude and 80°51'4.30" west longitude. The site covers approximately 400 acres and is located in a mixed

residential and commercial area.

The main facility is bounded to the north by the Warren Outerbelt; to the east by Mahoning Avenue; to the

south by North River Road and the Mahoning River; and to the west by residential properties. Ohio Star

Forge lies within the site boundary, in the northwestern portion of the site, and shares an address and

entrance driveway with the site. An electrical substation, as well as several associated small buildings, is

located to the south of the main facility, immediately south of North River Road. In this area, there are also

two water treatment buildings and unmaintained settling ponds associated with the main facility. At the

time of the initial site assessment, abandoned transformers were scattered throughout the property south of

North River Road. The substation and surrounding property contained approximately 75 oil-filled

transformers and 253 oil-filled capacitors. The substation is sloped towards the Mahoning River,

approximately 200 feet south of the substation. Topography across the site slopes gradually to the west.

The site's elevation is approximately 913 feet above mean sea level.

The outer fences of the main facility are largely intact; however, the shared entrance brings traffic from

other businesses through the site, without barriers, to the waste locations. Both humans and wildlife can

access the abandoned buildings and the waste inside these buildings. Additionally, graffiti has been

observed within the west warehouse buildings. Various debris piles are present throughout much of the

site.

The electrical substation and water treatment plant area is fenced, gated, and locked; however, evidence of

trespassing, including cut locks, has been observed at the site. The substation is sloped towards the

Mahoning River, approximately 200 feet away. There are settling ponds located at the Mahoning River;

however, they are not maintained. There are several small buildings associated with the electrical

substation.

1.2 SITE HISTORY

Warren Steel Holdings, LLC (WSH) is a closed steel manufacturing facility that produced various solid

steel billets from scrap steel. WSH operated at the site until January 2016, when operations ceased.

Information reviewed indicates that the Ohio Environmental Protection Agency (Ohio EPA) and EPA have

conducted several inspections at the site since 2007. A final inspection was conducted in January of 2016,

in which several "Notices of Violation" were issued by Ohio EPA. WSH failed to address some of these

violations, prior to ceasing operation in January 2016. Several areas of hazardous waste, universal waste,

polychlorinated biphenyl (PCB)-contaminated oil, asbestos, water and wastewater treatment chemicals,

Warren Steel Holdings Site OPA Removal Report, Revision 2 December 20, 2018 electric arc furnace (Resource Conservation and Recovery Act [RCRA] hazardous waste code K061) dust,

non-hazardous slag, lime, ignitable drums, oil-filled transformers, and miscellaneous unknown materials

are still present on site.

Ohio Star Forge owns approximately 5 acres of land on the northwestern portion of the site and is currently

an operating facility. The property owned by Ohio Star Forge is excluded from the project scope. The

Copperweld Steel Company operated at the site from the 1940s until 2001 when much of the property was

disassembled and sold at auction. Warren Steel Holdings purchased the property and assets and operated

the facility until November 2015 when it began shutting the facility down. There are numerous abandoned

buildings on the site. The abandoned buildings are in various states of deterioration. Most production

equipment has been removed from the buildings, but some still contain various abandoned waste.

Additionally, several buildings contain old equipment pits with unknown liquids, including at least one

with PCB-containing oil.

On February 8, 2016, Ohio EPA requested assistance from EPA in conducting a CERCLA time-critical

removal action at the site (Ohio EPA 2016). EPA, ERRS, and START mobilized to the site on April 24,

2018 to conduct removal activities.

Between June 11 and June 15, 2018, under the CERCLA time-critical removal action, ERRS and their

subcontractor (SDMyers, LLC) inspected all the on-site transformers, a total of 126 units, and sampled for

oil content and PCB analysis, if possible. The analytical results indicated that seven transformers, from the

abandoned electrical substation located south of North River Road, had PCB concentrations greater than

50 parts per million (ppm). These seven transformers at the electrical substation that were above 50 ppm

PCBs were addressed under the concurrent CERCLA removal action.

There are approximately 75 transformers and 253 capacitors located in the abandoned electrical substation

(or surrounding property) approximately 200 feet from the Mahoning River (see Figure 2 in Appendix A).

The transformers and capacitors were in average to poor condition, with apparent rusting and surface

damage (denting) evident on the majority of the units. Paint on the transformers was in poor condition

(flaking and/or missing), causing the units to be susceptible to rusting. Settling lagoons located between

the substation and the Mahoning River are not maintained and are inoperative.

Additionally, during the CERCLA removal action, START assessed an abandoned aboveground storage

tank, located at the site, that contained approximately 3,000 gallons of oil. Oil was sampled and confirmed

Warren Steel Holdings Site OPA Removal Report, Revision 2 December 20, 2018

Tetra Tech, Inc. TDD No.: S05-0004-1807-203 to be oil uncontaminated with PCBs. The tank is located immediately north of an outfall to the Mahoning River, on the north side of North River Road (see Figure 2 in Appendix A).

Due to the condition of the tank, transformers, and capacitors, and their direct proximity to the Mahoning River, EPA submitted an OPA Project Plan for funding to remove the immediate threat of an oil release to the river (EPA 2018). On July 20, 2018, the OPA 90 Project Plan was approved.

2.0 REMOVAL ACTION ACTIVITIES

This section discusses the OPA removal action conducted at the site from August 27, 2018 to

September 27, 2018. EPA On-Scene Coordinator (OSC) Stephen Wolfe was the site contact. The START

contractor was Tetra Tech. The ERRS contractor was ER. START completed written and photographic

documentation of site conditions and activities. ERRS and their subcontractor (Emerald Transformer)

prepared waste for removal and arranged for off-site transportation and disposal. Removal activities were

conducted under the direction of the on-site EPA OSC.

Level D (steel-toe boots, hardhat, and reflective vest) personal protective equipment (PPE) was donned

during all removal activities, as specified in the WSH CERCLA removal action site-specific HASP (ER

2018). The general chronological order of activities included oil tank and transformer draining; capacitor

and transformer dismantling and removal; and off-site transportation and disposal.

2.1 DOCUMENTATION

Throughout the OPA Removal Action, START documented the work conducted by the ERRS contractor

with written and photographic documentation of site conditions and activities. ERRS and their

subcontractor (Emerald Transformer) prepared oil for removal and arranged for off-site transportation and

disposal.

In the field logbook, START personnel recorded daily weather conditions, ERRS contractor activities, and

oil disposal events. Representative site photographs are presented in Appendix B, and START's field notes

are provided in Appendix C.

2.2 OIL DRAINING, DISMANTLING, AND REMOVAL

On August 27, 2018, an ERRS subcontractor (Safety-Kleen Systems) collected 3,000 gallons of petroleum

material from the oil tank north of North River Road (see Figure 2 in Appendix A), near an outfall to the

Mahoning River. A vacuum truck was used to containerize the oil for off-site transport and disposal at the

subcontractor's facility.

Between September 17 and 27, 2018, the ERRS subcontractor, Emerald Transformer, drained and

dismantled transformers, located on the abandoned site electrical substation, that contained oil with a PCB

concentration less than 50 ppm. Transformers were dismantled and removed, as able; large transformers

unable to be removed were drained of oil and left in place. A vacuum truck was used to containerize the

drained transformer oil for transport to the subcontractor's facility for treatment and eventual recycling.

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Transformer carcasses were transported off-site and recycled. Additionally, 253 oil-filled capacitors were dismantled and disposed of by incineration.

The total volume of each waste stream and disposal method are presented below:

Table 1
Warren Steel Holdings OPA Removal Volumes

Waste Stream	Medium	Quantity	Units	Disposal Method
Petroleum Material	Liquid	3,000	Gallons	Disposal
Transformer Oil (<50 ppm PCBs)	Liquid	47,000	Gallons	Treatment and Recycling
Oil Filled Capacitors	Solid	253	Units	Incineration and Landfill
Metal (Transformers)	Solid	90	Tons	Recycling

Notes:

< = Less than

PCBs = Polychlorinated biphenyls

ppm = Parts per million

Bill of ladings and disposal documentation are provided in Appendix D.

3.0 REMOVAL SUMMARY

The following is a summary of the removal activities completed intermittently from August 27 through September 27, 2018:

- Transformers in an abandoned electrical substation, located less than 200 feet from the Mahoning River, were drained, dismantled, and removed from the facility. In total, approximately 47,000 gallons of oil and 90 tons of metal were removed from the site, to be treated and recycled.
- Oil-filled capacitors were dismantled and removed from the abandoned electrical substation for disposal.
- Petroleum material was drained from a tank located near an outfall to the Mahoning River and removed for disposal.

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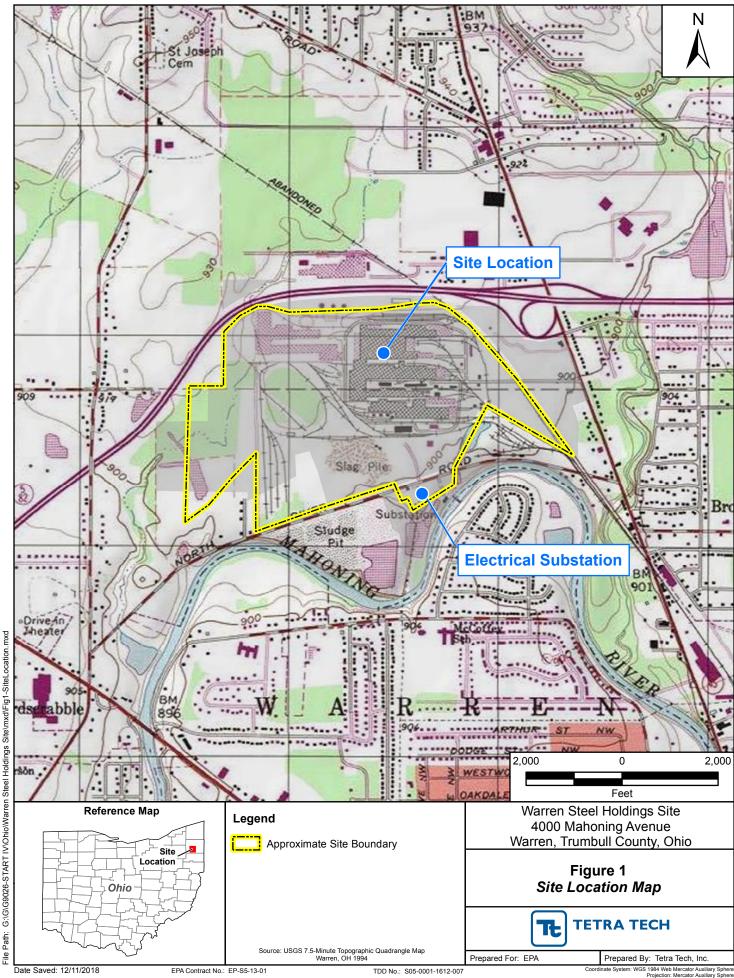
4.0 REFERENCES

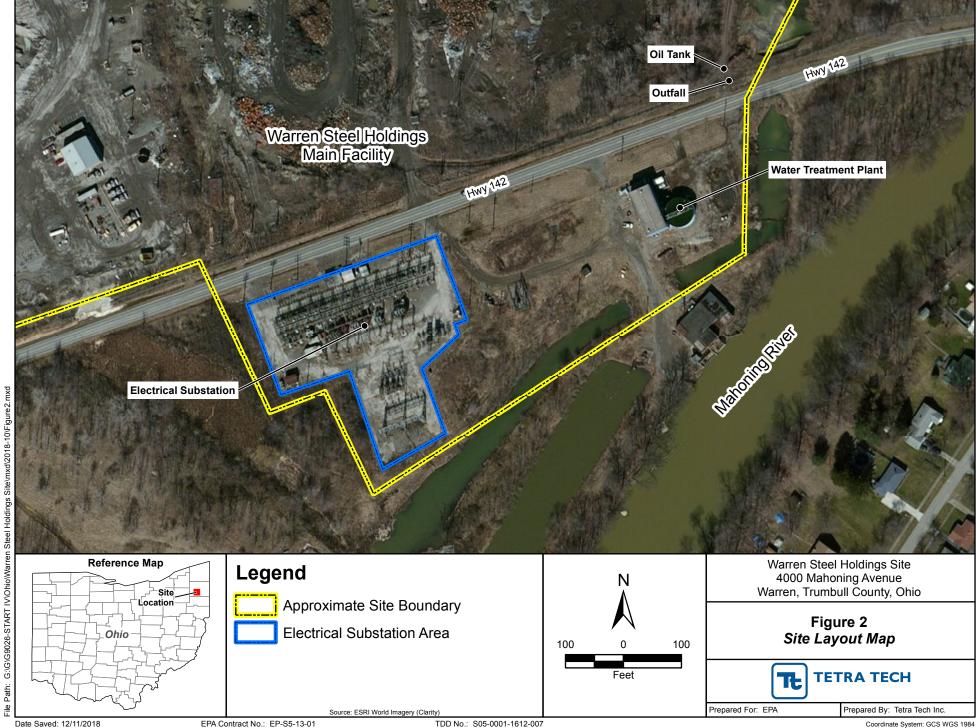
- Environmental Restoration, LLC (ER). 2018. "Site Health and Safety Plan." Prepared for EPA under Contract No. EP-S4-16-02. April 4.
- Ohio Environmental Protection Agency (Ohio EPA). 2016. "Time Critical Removal Request Warren Steel Holdings." February 8.
- Tetra Tech, Inc. (Tetra Tech). 2016. "Quality Assurance Project Plan." Prepared for EPA under Contract No. EP-S5-13-01. Revision 3. June 28.
- Tetra Tech. 2018. "Emergency Contingency Plan, Revision 2 Warren Steel Holdings Site." Prepared for EPA under Contract N. EP-S5-13-01. April 26.
- U.S. Environmental Protection Agency (EPA). 2018. "Oil Removal Project Plan; Warren Steel Holdings (E18519), Warren, Mahoning County, Ohio." July 9.

APPENDIX A FIGURES

1 – SITE LOCATION MAP

2 – SITE LAYOUT MAP





Coordinate System: GCS WGS 198
Datum: WGS 198

APPENDIX B PHOTOGRAPHIC DOCUMENTATION LOG



Client: U.S. Environmental Protection Agency **Site Name:** Warren Steel Holdings Removal Site

Location: Warren, Ohio

Prepared by: Jackie Cole

TDD Number: S05-0004-1807-203

Dates: April 27, 2017 to September 27, 2018

Photograph No. 1

Date: 4/27/2017

Description: Overview of the site abandoned electrical substation area, as seen during the initial Warren Steel Holdings site assessment; facing south.



Photograph No. 2

Date: 5/11/2018

Description: Abandoned oil tank near an outfall to the Mahoning River, off North River Road; facing southeast.





Client: U.S. Environmental Protection Agency Site Name: Warren Steel Holdings Removal Site

Location: Warren, Ohio

Prepared by: Jackie Cole

TDD Number: S05-0004-1807-203

Dates: April 27, 2017 to September 27, 2018

Photograph No. 3

Date: 9/17/2018

Description: Transport and disposal contractor draining mineral oil from a

transformer; facing south.



Photograph No. 4

Date: 9/20/2018

Description: Emergency and Rapid Response Services (ERRS) subcontractors dismantling capacitors from the abandoned substation; facing west.





Client: U.S. Environmental Protection Agency

Site Name: Warren Steel Holdings Removal Site

Location: Warren, Ohio

Prepared by: Jackie Cole

TDD Number: S05-0004-1807-203

Dates: April 27, 2017 to September 27, 2018

Photograph No. 5

Date: 9/26/2018

Description: Dismantled capacitors awaiting removal; facing northwest.



Photograph No. 7

Date: 9/27/2018

Description: ERRS subcontractors dismantling bushings from abandoned substation; facing southwest.





Client: U.S. Environmental Protection Agency **Site Name:** Warren Steel Holdings Removal Site

Location: Warren, Ohio

Prepared by: Jackie Cole

TDD Number: S05-0004-1807-203

Dates: April 27, 2017 to September 27, 2018

Photograph No. 8

Date: 9/24/2018

Description: ERRS

subcontractors dismantle and stage transformers at the abandoned electrical substation; facing west.



Photograph No. 9

Date: 4/27/2017

Description: Abandoned transformers near the site electrical substation as observed during the initial site assessment; facing west.





Client: U.S. Environmental Protection Agency **Site Name:** Warren Steel Holdings Removal Site

Location: Warren, Ohio

Prepared by: Jackie Cole

TDD Number: S05-0004-1807-203

Dates: April 27, 2017 to September 27, 2018

Photograph No. 10

Date: 9/24/2018

Description: Dismantled transformers secured on disposal contractor truck for transport and disposal via recycling; facing northeast.



APPENDIX C START FIELD NOTES

WARREN STEEL OPA



Nº 351FX



Name	
Manne	

START FIELD LOGBOOK

Logbook Tracking Number <u>CL</u> (Φ)

Site Name WANTEN STEEL HOLDINGS - OPA

Issue to TACKIE COLE

Date Issued 8/31/2018

TDD# 103X902600045051807203



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3-4 1	Petroleum material transformers	8/27/18
3-4 1	Et draining transformers	
5-6-		414
	Drown transformers, mobe boom lift	7/18/18
7.8	brain transformers, elect bush	9/19/18
	Bagin dismonthing transformers	9/20/18
	continue draining to dismonthing appartors	9/24/18
3-11/200	" "	9/25/18
14	" "	9/26/18
15	" " END OPA WORK	9/27/18
	END	
	60GBOOK	in.
	GB	
	°ok	
	1/27	
	9/127/18	
	3	
	-24	

28/27/2018 WARREN STEEL LOPA) MONDAY 9/17/18 WARDEN STEEL (OFA) \$735 -START WILLAMS ONCITE SIGN-IN AT 0700 START Cole on-vite, H+S mtg. Discuss SECURITY CHECKPOINT MET W/ ERES RM HASP (abovers naw to site) and ED KERNICKI W/ ENVIRONMENTAL ROSTscope of work. START provide ausight GENTION. DISCUSSED SCOTE OF WARK FOR - Safety-Kleen will be on-sight TODAY & FOUNTING TWO WEEKS SAFETY. to vacuum al in tonker (v3,000 god.) on southwestern side of property, KLEDY WILL SE CONTINUOUSLY VACUUMING PCB OIL FROM THE TRANSFORMIES SOUTH north of River Road "WEATHER: 72-90'E; 98% RH; Wha SSW OF N PIVER ROAD. -WEATHER 65-76" +; 86% PH; WIND SOW @ 4 met; 10% chance of rouin; @ \$-5 MOH; 76% CHAVE GERAIT MOSTLY 30.1" Hay mostly cloudy 0945 SAPERY-Kleen on-site to transfer KONON * CORRECTION - EMERAL SERVICES WILL BE oil contents from Tanker 1002 Begin transferring oil CONDUCTING DIL VACUUMING. dads - DENIS GETZ W/ EMERGED SERVICES 1045 Oil transfer complete, Safet OUSICE TO DISCUSS SCOPE OF WORLL. FIRST Kleen-offsitew/ 3,000 gal. oil. TANKER DERIVES OF SITE ERES & EMERALS START Complete w/ OPA-portion of Warren Steel Removal for days DEPART TO SOUTH DEN TRANSPORTES TO BEGIN VACUUMING. 8/27/18 1015 - EMERALD REGINS DRAINING THE FIRST TRANSFORMER (< 50 PM). SERIAL KTC 1 5N: 2\$506-2, AN ESTIMATED 12,256 GOLLANS. 16 PAM POBS. 1335 - DYTELD DEPARTS W/ FIRST LOAD SE 5,560 GRUSNS OF PCB OIL FROM TEUNSFORMER TC1 (5N: 2\$586-2) UNDER Rete in the Rain

WARREN STEEL (OPA) TUESDAY 5 19/17/18 WARRENSTEEL (OPA) (ACUMM BOL. 967983. (SILL OF LADING) - WW 0700 - START WILLIAMS ONSITE, SEN-IN 1415 - START WILLIAMS DEPARTS AFTER OSC W/ ERES & DISCUSS SCOPEBE WOLFE RECOMMENDS DEPARTING. EMERALD TODAY. EMEROND SERVICES WILL CONTINUE TO PRAIN TRANSFORMERS WILL NOT BE RETURNING FOR A SECOND ROUND OF DEATNOYE. ON THE SOUTH SIDE OF MPINER * BACKNOTE - 18,750 KILOCROMS HAVLED OFF. POAD. ~WEATHER: 62-83° = : 9690 RH; WIND: SEW &MPH, 10% CHANCE OF CAIN, DEMSE NEAVY FOOD CURRENTLY \$710 - EMBERIO SEEMETS ONSITE W/ LARGER 6, 800 GALON TONKER TEVER STAFF DEAINAGE OF TEAMSORMER SN# C-65397-5-1 ESTIMATED 5,933 GOLLARS OF NON- DETECT OIL . \$845 - BOOM LIFT DELIVERED ONSITE FOR GERS/ EMERALD TO REGIT DISMANTUR CAPACITORS & SMALL TRONSFORMES \$905 - BMOZOLD DEPARTS SITE, HAULS OFF 5,500 GOLLANS/41250 LES/18,750 Ellogeons of NON-DETECT, NON-PAZARDOS RANGENTE DI. DESTINO FOR EMBROLD'S TWINGSVERY FACILITY 1126 - ERSS IS INFORMED EMERALD DOUS NOT HAVE ANOTHER TANK TRUCK TO Rite in the Rain

WARREN STEEL (OPA) 9/18/18 WARREN STEEL (OPA) 9/19/18 (CONT) - RETURN W/ TODAY . NO FURTHER 0100 -SOUTHULANS ONSITE, OSC WOLFE & ERES EM ONSITE, SIGN-IN WERES DRAINING WILL TORE PLACE TODAY. 1400 - EMERALD ACTUALLY DOSS PETURN ... & DISCUSS SCOTO OF WORK TODAY MODES UP TO TRONSFORMER 3-TTC-3 WHICH WILL CONSIST OF CONTINUE SN# C-03814-5-1; 5,945 TO DRAIN OIL FROM TOANSFORM BES CAUSINS OF N.D. OIL (ESTATORES) & POSSIBLY STARTING TO DISMANTLE TRANSFORMIZE : F EMBROUD DAS A 1540 EMERALD DEPARTS SITE HAVES OFF 18,750 KILOGRAMS OF NON-DETECT, CREW SENT TO THE SITE MUENTHER: 58-81 PF; 97% RH; WIND NOW- HAZDEDONS TRANSFORMER (MINDEON) WHWE SMAH , O'/ CHANCE OF EATY, OIL, UNDER B. O.L. 867585, FOR 29.98 Hg; PARTUY CLEUDY _ W TWINGSURY, OH. WW \$ - FINGHED FOR THE DAY OU FUZSONNEL OFFERE. 10740 - STERICYCLE ABOUTS ONSITE TO NAULOUT 4, 5-GALLON SVEXETS OF NILTI CARTRIDGES UNDER MANIFOST \$18361448JJK 0815-STEPLOYOLE DEPARTS SITE - W 8800 - 6825 BEGINS CUEARING SITE OF VEGETATION USING A BRUSH-HOG ATTACHMENT TO A SKID STEEL 1000 - EMERSUO ARRIVES ONSITE FOR MORE TEANSFORMER PRAINING BZD- EMERALO BEGINDERINING FROM TORKS Former Stat 20586-2 (SAME AS MONDAY). 1100 - EMBERLD DEPARTS SITE W/ FIRST Rite in ere Rain

WARREN STELL (OPA) TRUESDAY WARREN STEEL (OPA) 9/20/18 HAVE-OUT OF TODAY. 18,750 KINGGEOMS 736 - START WILLIAMS ONSITE, EROS, EPA OF < 50 PRM PCB OIL VACUUMED FROM AND EMERGLS ALLEDDY DISTE, EMERALD TRANSFORMURE SN# 20586-2 UNDER HAS THREE EMPLIYEDS ONS TE TO BEGIN 6.O.L. 867986. DISMONTLING THE TEAMSFORMERS, AUSO CONTINUE TO DEDIN TEAKSORMERS EMBRAID RETURNS ONSITE TO CONTINUE "WEATHER! 54-85°F; RH 96%, WIND WSW DRAIMING TRANSFORMEDS -@ \$ MPH, \$9. CHONCE OF COIN 38 01" Hg, 1515 - EMERALO BEGING TO DRAIN TRANS-FORMER SN# 20586-1: ESTIMATES MOSTLY SUNNY 12,250 gowons OF ND OIL \$860 - EMEROLD BEGINS DISMONTLING -EMERAL DEPARTS WITH SECOND LOAD! TRONSFORMES IN THE FRANKLIN 18,75\$ KILOGROMS OF NON-DETECT SUB ROUTE STATION - SOUTH OF N PCB TEANGENISE OIL UNDER BOL: PIVER ROAD. START WILLIAMS STEINS 867587. -MARKING ALL TRANSFORMERS W 1718 - FINISHED FORTHEDAY DEPART - W TC-#, SN#, & PCB RESULT, FOR BETTER IDENTIFICATION DURING NAVI OUT. LABELED/MARKED ALL TENNOSEMORS, INCLUDING THE FOW IN THE SCEAP YARD TO THE EAST OF FEARYUM SUB STATION. 1200 - EMBERLO BEGINS DISMANTUMY CAPACITORS IN FRONKLIN STOTION 1345 - EMERALD TONK TRUCK ONSITE. BEGINS DEAINING TEAMSFORMER 20586-1 1510 - EMERALD OFFETE. DRAINED (OVER) Rete in the Rain

1/20/18 WARRENSTEEL (OPA) 9/24/18 WARREN STEEL (OPA) MONDAY 11 (N. 0) 18,200 KILOGRAMS FOOM TRANSFORMER \$720 START WILLAMS ONSTE, EMERALD & 20036-1 UNDER B.O.L. 867588 EDZGONSHE. BEES ESCORTED OMERALD 1530 - TOENASO WARNING! EARLY SHUTOWN TO FRANKLIN SUBSTATION TO DRAIN FOR THE DAY TESNSTURMES & CONTINUE TO DIS-1945 - STORT VILLIAMS OFFSITE MESTIBLE CAPACITIONS & BEGIN TO DISMANTIE TEAUSFORMESS + ~ WEATHER: 59-70°F, EH 91%; WIND: WNWE 5-10MPH, 901-CHANCE OF ROIN & BACKNOTE - FRIDAY 9/21/18, EMERALD CONTINUED DISMONTHING CAPACITORS & DEAINED TEONSFORMERS: TC-S TC-362, TC-363, & TC-364 FOR A TOTAL OF 5,500 GOLLONS/18,750 KILDGROMS, WHICH WERE TOON SPORTED DEESTE UNDER B.O.L 867594 9750-EMEROLD BEGINS DRAINING TENSOOD TC-367, TC-365, TC-484, TC-31 TC-9, TC-429, TC-9068, TC-9068 &TC+9661, BOL. 867593 → 10333 KIND badd-EMERALO SEGINS DISMANTLING TROWS-Frences TC-(6,7,8,15,16,17, 18, 13, & 14), AN THE SMALLER, HIGHTE TEAMSFORMERS. THEY AUGO BEGIN REMOVING THE CETS IN FRANKLIN SIS STATION. Rete in the Rein

WARDEN STEEL (OPA) 9/24/18 WARRENSTEEL (6PA) 1500 -EMERALD RETURNS FROM DEDINING TANK STARTWILLIAMS ONSITE, EPA & TEVEK, W/ A LOW-BOY TRAILER AND OCE BERG ONGITE . SCOPE TODAY IS TO STARTS WADING THE LADGER CR.I. CONTINUE DISMANTUNG CO.I.S IN TENSFORMER WITS . UNITS TC-351 FRONKIN SUB I REMOVING THEM, TC-328, TC-350, TC-342, TC-348 WHILE AUSS DRAMING TRANSFORMERS TC-352; WHICH LEAVE THE SITE UNDER ON WARREN STEEL PROPERTY (CERCIA) MWEATHER: 62°-74°F, RH: 96%; WIND 3500 BOL 867592 - ALL PERSONNEL OFFSITE @ 5-10 MPH, 50% CHONCE OF RAIN. 0718 - EMERALD ARRIVED ONSITE -374\$ - EMERALD BEGINS CONTINUATION OF EBI TRANSFORMER DISMONTLING. 1130 - EMEROLD LOW-BY TRAILIE ARRIVES DISTER ESI, TOOKSORNESS: TC-341, TC-343, TC-344, TC-345, & TC-349 ARE LOADED ONTO THE TRAILE & HAULED OUT UNDER B.O.L. 867596 -1315 - EMEROLD DEPARTS W/ TRANSFORMEDS -1615 - 5MEED CO ARRIVES ONSTITE W/ LOW-BUY TRAILER TO ESMOVE MORE GOT TRANSFORMURS; LOADED CEST HEAVS-FORM 625. TC - (422, 424, 425, 642) & TRONSFORMERS TC-3 & TC-404 1728 - EMEROLO DEPARTS W LOAD OF TRANS-Formes more BIO.L. 867591 1740 - PUL PUZSONNEL DEFITE -

WARREN STEEL (OPA) THURSDAY 15 WARREN STEEL (6PA) 7/27/18 WEDNESDAY \$750 - STARTWILLIAMS ONSITE, ERRS ONSITE, 10 - START WILLIAMS ONSITE ERRS & EMBRALD ONETE . ENERALD WILL CONTINUE TO DESCUSSED EXPEDENDELL FORTODAY. DISMANTLE, WAD, & HAVLOUT CBIE 9715 - EPAR EMEROLD ONSITE, EMERSIO WILL DISSOSSEMBLE TEONSFORMERS IN FRANKLY TRINSFORMES TODAY ------~ WEATHER: 700-710F; PH: 939- WIND: NW SUBSTATION & RODY THEM FOR HOVLOUT. ~WEATHER: 49"-66"F, PH: 93%; WIND NNE es-18 mpH; 80% CHANCE OF RAIN. @ \$-5 MPH; 20% CHANCE OF RAIN. 73\$ EMECALD SEGINS WORK @ FEONYLIN SUB-9-30-5MBRALD BEGILS DISMONTHING TEAMS STOTION, DISMONTUNG TEASORMERS. FORMERS TC - (362,363,364,365) + CORRECTION - EMERSIO IS DISMANTLING 6936 - LOW-BUY TEDILER DERIVES @ FROMELIN CAPALITORS -OCB B SVS STOTION, LOADS OCE TC- 423, - LOW-BOY TEAILER ADDIVES SET TRONS-FORMERS TC-(346,347,421,426, 4 TELASTORMORS TC- (13,14,19 & 428) & Teans Genses TC-(15, 20,21,24,25,26,362,363,36 16,17, & 18) ARE HAVLED AWAY UNDER & 365) A HAVE ALL DWAY UNDER BOL. 867321. BO,L, 867322 ---1536 ALL PERSONNEL OFFSITE. -1005-EMEROLD DEPARTS FRANKLIN SUB NELLONG ww 1430- LOW-BUY TEAILER RETURNS FOR A SECOND LOAD OF TRANSFORMERS. EMBROLD BRINGS TC - (6,7,8,628 TO WSH, LOW-BOY TEDIUSE STEARETS WITH BUSHINGS & CAPACITORS - UM 1600 - ALL PERSONNEL OFFSITE WW 9/27/18 Rete in the Rain

APPENDIX D DISPOSAL DOCUMENTATION

	BILL OF LADING/MANIFEST	1. Shipper's US EPA ID No. (If OHRODOO7773		2. Page 1 of 1		
A	WARRE			83-0000		
	4. Shipper's Phone (442)-250-1718	}				
	5. Transporter 1 Company Name	6.	US EPA ID Number	A. Transporter's Phone	and and are are	
	SAFETY-KLEEN SYSTEMS		R000081205	972-265-	-2000	
	7. Transporter 2 Company Name	8.	US EPA ID Number	B. Transporter's Phone		
	9. Designated Facility Name and Site Address SAFETY-KLEEN SYSTEMS 354 PORTAGE BLVD	KOH 10.	US EPA ID Number	C. Facility's Phone		
	KENT, OH 4		981099401	330-673-		
	11. Shipping Name and Description HM			12. Containers No. Type	Total I	14. Jnit t/Vol
	NONE, NON DOT REGL WATER, DIETHEYLENE	ILATED. (WASTE GLYCOL), N/A	OIL,	DO I TT	03000	G
S	b.					
HIP	C. 3					
PER						
	d.					
	15. Special Handling Instruction and Additional Inform	mation				
	24H EMERGENCY#800- on initial transpo DOT/PRFL A. 839513 A) NONE B) C) D)	orter to add or 84/1686403 B.	(/TFI-Contract of substitute added)	retained by ge ditional trans	enerator sporters	confer on ger
	16a. US DOT HAZARDOUS MATERIALS SHIPPER	"This is to cer condition for t	tify that the above-named materials are properly ransportation according to the applicable regular	classified, described, packaged, marked ar tions of the Department of Transportation.	d labeled and are in proper	U
	Printed/Typed Name	her	nature required e if DOT regulated		Month Day	Year S E 16A
	16b. NON-REGULATED SHIPPER'S CERTIFICATION			eral regulations for Transportation or		OB
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ORTE	 Transporter 2 Acknowledgement of Receipt of Management of Receipt of		nature		Month Day	Year
E R		Joigh			· ·	. Juli
FACI	19. Discrepancy Indication Space					
LIT	20. Facility Owner or Operator: Certification of receip	t of materials covered by this form	m except as noted in Item 19.			
Ÿ	Printed/Typed Name	Sign	nature		Month Day	Year

U S E

16A OR 16B

4000 Mahuning Ave. Warren, OH

WORK ORDER NO. WS -1

DOCUMENT N	0,0010	003		STRAIGHT E	BILL C	F LADING			3%
TRANSPORTE	R1 Emer	ald Tra	nsformer		, ,		_ VEHICLE ID	# 410	7
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DESIGNATED						SHIPPER			
FACILITY EPA	ID# Emer	ald Tra	ncfeanar P	PM, LLC		SHIPPER EPA	ID#	<u> </u>	
ADDRESS	2 E. Highia	m of Einl		 	L	ADDRESS	OHROOO	107773	<u></u>
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CONTAINERS NO. & SIZE	TYPE	НМ		DESCRIPT	rion (OF MATERIALS	<u>Warren, Ol</u>	TOTAL QUANTITY	UNIT WT/VOL
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TRANSPORTER 2	/	DATE
PRINT RECEIVED BY	SIGN	DATE

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-2

DOCUMENT NO. 867584	STRAIGHT BILL	OF LADING			
TRANSPORTER 1 Emerald Tra	nsformer		VEHICLE ID	3/7	Ž:
EPAID# FLROOG1	6820		TRANS. 1 PH		
TRANSPORTER 2	<u> </u>	· · · · · · · · · · · · · · · · · · ·	VEHICLE ID	, # <u></u>	· · · · · · · · · · · · · · · · · · ·
EPA ID#	·		TRANS. 2 PH	ONE	
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DESIGNATED FACILITY Emerald Tra	nsfomer PPM_LLC	SHIPPER	_Warren Stee	•	
FACILITY EPA ID #		SHIPPER EPA	ID# OHROOGO		
ADDRESS 1672 E. Highland Rd		ADDRESS	4000 Mahoni		
CITY Twinsburg, OH 44087	STATE ZIP	CITY		STATE Z	ZIP
CONTAINERS NO. & SIZE TYPE HM	DESCRIPTION	OF MATERIALS		TOTAL QUANTITY	UNIT WT/VOL
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SHIPPER	Stephen Links 172 186	A Section of Section 1	7/12/10
	PRINT	SIGN	DATE
TRANSPORTER 1	HAROMS A) PONS, JP	Burt White	09-18-18
	PRINT	SIGN	DATE
TRANSPORTER 2			
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RECEIVED BY	:		

4000 Mahoning Ave. Warren, OH

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WORI	K OF	RDER	NO		-3

DOCUMENT NO	8675	85		STRAIGHT BILL	OF LADING			
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EPA ID#	_F1.F	0004	8820			_ TRANS. 1 PH	ONE	·
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EPA ID#	· 					_ TRANS. 2 PH	ONE	
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DESIGNATED	* • •	rald Trac	istomer F	PM LLC	SHIPPER	Warren Stee	ē# :	
FACILITY EPA	ID#		-		SHIPPER EP		on the the total	
	2 E. Highl:	ind Rd			ADDRESS	0 H R 0 0 0 0 4000 Mahoni	ng Ave.	
CITY	nsburg, OF	44097	STATE	ZIP	CITY	Warren, Ol		ZIP
CONTAINERS NO. & SIZE	TYPE	. HM		DESCRIPTION	OF MATERIAL	.S	TOTAL QUANTITY	UNIT WT/VOL
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PRINT	SIGN	DATE
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4000 Mahoning Ave. Warren, OH

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DOCUMENT NO	o. 8675	86		STRAIGHT B	IEL (OF LADING			
TRANSPORTER	R1 Emer	ald Tran	sformer			· · · · · · · · · · · · · · · · · · ·	VEHICLE ID #	413.	<u> </u>
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DESIGNATED		ald Trai	asformer F	PM, LLC		SHIPPER	Warren Steel		
FACILITY EPA	ID.#				ž	SHIPPER EPA	ID# OHROGOO	07773	
ADDRESS 167	2 E. Highia	nd Rd	- 4	*	e des	ADDRESS	4000 Mahonii	ig Ave.	
CITY Twi	nsburg, OH	44087	STATE	ZIP	- <u>1</u> 2	CITY	Warren, OH	STATE 44483	ZIP
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4000 Mahoning Ave. Warren, OH

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DOCUMENT NO) 86/J	8/		STRAIGH	r Bill (OF LADING			المستخرج ويستعو	77
TRANSPORTER	1 Emer	ald Trac	15former		• • •		_ VEHICLE II	D #	. 25/ 1	S. Andrews
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DESIGNATED		ald Tra	nsformer	- PPM, LLC		SHIPPER	Warren Si	teel		
FACILITY EPA				· -		SHIPPER EP	AID# OHROOS	30077	73	
ADDRESS	2 E. Highia	nd Rd	- 1	-	7	ADDRESS	d000 Mahi	oning A	· ·	
CITY	rsburg, OH	44087	STATE	ZIP	:.	CITY	Wanen,	STAT NA 440	E .	ZIP
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SHIPPER Stephen Wolfe		IGN		11:11:0
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PRINT RECEIVED BY	S	IGN		DATE

4000 Mahoning Ave. Warren, OH

WORK ORDER NO W5-6

DOCUMENT NO	. 86758	8	STRAIGHT BILL	. OF LADING			
TRANSPORTER	1 Emerald	Transformer			VEHICLE ID	4 4/3	7
EPA ID#	FLRO	0016820	and the second		_ TRANS. 1 PH	ONE	
TRANSPORTER	2			A	VEHICLE ID	† <u></u>	
EPA ID#			., .		_ TRANS. 2 PH	ONE	
		<u> </u>					
DESIGNATED I		l Transformer	PPM, LLC	SHIPPER	Warren Stee		
FACILITY EPA			194	SHIPPER EPA			
ADDRESS	E. Highland	Rd		ADDRESS	4000 Mahoni	ng Ave	
CITY Twin	sburg, OH 4	STATE 4087	ZIP	CITY	Warren, Ol-		IP
CONTAINERS NO. & SIZE		нм	DESCRIPTION	N OF MATERIAL	S	TOTAL QUANTITY	UNIT WT/VOL
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ABN AU	TECT					05A 9	-20-18

SHIPPER STOPPING WOLF GETS	SIGN	DATE JOINS
PRINT TRANSPORTER 1 Hangus Les Parce IR	SIGN Hand Words	DATE 09-20-18
PRINT TRANSPORTER 2	SIGN"	DATE
PRINT RECEIVED BY	SIGN	DATE

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. (1) 5-7

DOCUMENT NO	o. 80 / 5	94	STRAIGHT BILL	OF LADING			
TRANSPORTE	R.1, Emer	ald Trai	nsformer		VEHICLE ID	# 2550	36 T
EPA ID#	_FL S	0001	8920		TRANS. 1 PI	IONE	g ,
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DESIGNATED	Free		nsformer PPM_LLC	SHIPPER	Warren Ste	**************************************	
FACILITY EPA	AID#	-		SHIPPER EPA	ID#		
ADDRESS	2 E. Highla	nd Rd		ADDRESS	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ing Ave.	
	nsbury, OH	44087	STATE ZIP	CITY	Warren, Ol	STATE	ZIP
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TRANSPORTER 1 HAROND W PATTE JR	SIGN Polls On	DATE 29-21-18
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4000 Mahoning Ave. Warren, OH

WORK ORDER NO.

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described, packaged, marked and labeled and are in proper condition the applicable regulations of the Department of Transportation.

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TRANSPORTER 1	PRINT HAMOO WY Por	TS. TR	SIGN/ Harrif WASILY	DATE 07-24-18
TRANSPORTER 2	PRINT		SIGN //	DATE
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4000 Mahoning Ave. Warren, OH

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WORK		NO	W5	1000	٠.

DOCUMENT NO	o. 8675	592	,	STRAIGHT BILI	OF LADING			
TRANSPORTE	1 Emer	rald Tran	rsformer	·		_ VEHICLE ID	3204	<u>/</u>
EPA ID#	<u> F1 </u>	20003	6820			_ TRANS. 1 PH	ONE	
TRANSPORTER	32		· .	·		_ VEHICLE ID (‡	,
EPA ID#	·		,			_ TRANS. 2 PH	ONE	
DESIGNATED			nsformer (PM, LLC	SHIPPER	Warren Stee		
FACILITY EPA	VID#	: .		,	SHIPPER EP	AID# OHROOOO	07773	
	2 E. Highla	and Rd	•		ADDRESS	4000 Mahoni	ng Ave.	
CITY	naburg, OH	1 44087	STATE	ZIP	CITY	Warren, Oh		ZIP
CONTAINERS NO. & SIZE	TYPE	нм	-	DESCRIPTIO	N OF MATERIAL	.s	TOTAL QUANTITY	UNIT WT/VOL
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05h 09-	24-18				& CONTINUE	THE SHEET FOR	umove 7	o Tr.

SHIPPER STATEM WOLL USIGN OSC	SIGN Wed	DATE / 1/18
TRANSPORTER 1 Hours Willer	SIGN / WALLS	DATE
PRINT TRANSPORTER 2	SIGN	DATE
PRINT RECEIVED BY	SIGN	DATE

Emerald Transformer PPM, LLC- PCB CONTINUATION SHEET

**Each unit Must Be Marked on Sheet With All corresponding information Filled in * *

**THIS PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES* GENERATOR: ALTERNA STEEL

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Manifest Unit Line Type	ut Generator	Serial Number	Material Description	Out of Service Date	KVA	Transformer Type	LBS	KGS	Full or Empty	PCB Level
+-	PM TO-351	22423	200	9-4-18			3778	05 H/	Faul	· ND ·
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	70-357						3278	03.11	4	NON
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	70-348						3228	1490	MM	8 PM
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UNIT TYPES:		TRANSFORMER TYPE;	<u>E</u> ;		B=BUSHING	SHING		T=TRA	T =TRANSFORMER	R
DM = DRUM MEIFAL	ETAL	POLE			C=CA	C =CAPACITOR D=DEBRIS	EBRIS	PAD		
MATERIAL DESCRIPIIQII:	SCRIPHOH:	DF = DRUM FIBER CN	DF = DRUM FIBER CM=CONTAINER METAL	L	0=01L			SUBSTATION	ATION	
A-SWITCH, OCB, etc	B, etc	CW= CONTAINER WOOD	000							

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. 105-10

DOCUMENT NO	b. 8675	596	:	STRAI	GHT BILI	L OF LADING				,
TRANSPORTER			sformer	<u>-</u>		Kanti .	VEHICLE	ID#	320	4
EPA ID #	FIE	10001	6820	<u>.</u>		· .	TRANS.	1 PHO	ONE	
TRANSPORTER	R2						VEHICLE	ID#		
EPA ID#	· · · · · · · · · · · · · · · · · · ·			 		·	TRANS.	2 PH(ONE	: · · · · · · · · · · · · · · · · · · ·
<u> </u>			· 							7.
DESIGNATED		raid Tra	nsformer P	PM, LL	.0	SHIPPER	Warren	Steel		
FACILITY EPA	(ID#					SHIPPER	EPA ID # O H R 0	000	07773	
ADDRESS 167	2 E. Highla	sid Rá				ADDRESS	ACAD Ma	~	- .	
CITY Twis	asburg, Ol-	i 440et	STATE	ZIF	•	CITY	Warrer	, OH	STATE ESMA	ZIP
CONTAINERS NO. & SIZE	TYPE	НМ		DÉS	CRIPTIC	N OF MATER	IALS		TOTAL QUANTITY	UNIT WT/VOL
. 05	CM		i			ed Material (mi		<u> </u>	8643	K
01	M		В. //	N DOI	T REAR	MILL MITTE	Edit y f punerd	6/1)	1/36	K
			C.				•			
,	7.		D.	. ,				,		
			E.	. "	•					
			F.							
	. ,		G.	,	-		1			±
			H.	· · · · · · · · ·				- ;		
SPECIAL HAN						DSD OP	25-18			

SHIPPER	PRINT	USC SIGN	DATE DATE	7/25/19
TRANSPORTER 1	PRINT MARCO	R SIGN/	Uff () DATE	25-18
TRANSPORTER 2	PRINT	SIGN	DATE	., .
RECEIVED BY	PRINT	SIGN	DATE	

Emerald Transform	ner PPM, LLC e Marked on S	Emerald Transformer PPM, LLC- PCB CONTINUATION SHEET **Each unit Must Be Marked on Sheet With All corresponding information Filled in **	SHEET ling informa	tion Filled ii	* [);//		· '.
**THIS PAGE MUS	ST MATCH TH	**THIS PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES P9 / Of / GENERATOR: LINGUEN STURE	IPANIES*	iaur. Resc	OLS TOUR THE MANIFIESTY	ANIEE LANIEE	*	867596	3	<i>C</i>	
Manifest Unit Line Type	Unique Generator ID Number	Serial Number	Material Description	escription	Out of Service Date	KVA	Transformer Type	LBS	KGS	Full or Empty	PCB Level
NO)-96	76-349	12/12	20		9-25-18			3278	0621	Faul	NOV
	72-345	18/68	,					3650	1659	Pau	NO. J
	76-834	62181					•	0122	1032	PM DY	\
	1/2-34	1-02-459E VIAK						94/0	2794	Fall	NO /
0	EHE-37	5265	A		4		•	اما	1659	KIGMET	VD /
967 M	522	U89985	TOUS BROWER	ranck	4		SVB	2500	1/3%	(Zuut	Ø
									-		-
		. ,									
											(
	•		*							1 5 6CD	
	-				-					4898	ア
UNIT TYPES: DM = DRUM METAL	AL.	TRANSFORMER TYPE; POLE	E;			B=BUSHING C=CAPACIT	B=BUSHING C =CAPACITOR D=DEBRIS	EBRIS	T=TRA PAD	T =TRANSFORMER PAD	- -
MATERIAL DESCRIPTIOII:	RIPITOII	DF = DRUM FIBER CM=CONTAINER METAL	1=CONTAIN	IER METAI	. 1	0=01L	aura arak हा d-पोर्टिनेना पर्दे हैं।		SUBSTATION	ATION	
A-SWIICH, OCB, etc	9	CW= CONTAINER WOOD					t standindarsville til sviande	· · · · · · · · · · · · · · · · · · ·			

4000 Mahoning Ave. Warren, OH

WORK ORDER NO WS-10

DOCUMENT NO	8675	91		STRAIG	HT BILL	OF LADING			
TRANSPORTER	R1 Emer	ald Trac	ingthius i	.	i i i i i i i i i i i i i i i i i i i	·····	VEHICLE ID :	# <u>* </u>	3604
EPA ID#	- F L N	0001	6320	·	: . <u> </u>	· · · · · · · · · · · · · · · · · · ·	TRANS. 1 PH	IONE	· · · · · · · · · · · · · · · · · · ·
TRANSPORTER	3.2				· · · · · · · · · · · · · · · · · · ·		_ VEHICLE ID :	# <u>35.</u>	
EPA ID#		· .	<u>-</u>	······································			TRANS. 2 PH	ONE	
DESIGNATED	[- 144 ca)	ald Trai	osfonne	· PPM IL(•	SHIPPER	Warren Ster		
FACILITY EPA	iD'#					SHIPPER EP	AID# OHROOOO	07773	
	2 E. Highla	nd Rd	· · · · ·	· · · · · · · · · · · · · · · · · · ·		ADDRESS	4000 Mahoni	ng Ave.	
CITY	sburg, OH	44087	STATE	ZIP		CITY	Warren, Ol-		ZIP
CONTAINERS NO. & SIZE	TYPE	₩.,		DESC	CRIPTION	OF MATERIAL	_S	TOTAL QUANTITY	UNIT WT/VOL
2	ar em		Α.	Non DOT 1	egulated	Material (mine	Addition	19742	165
4	CM		В.	MONDOT	Regar	ald Mate	Brenkers	14,040	165
	Dat.	er.	C	1					
	Sec.	San	D."						
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SPECTAL HAN	DLING INS	TRUCTI	ONS						
	,	* Ma			r few	, , ,			

SHIPPER SIGN	PRINTWOLE	ULEGS	SIGN	- Work	DATE 25-18
TRANSPORTER 1	PRINT/ (EX	Caulder	SIGN	4 Carlo	DATE 25-18
TRANSPORTER 2	PRINT	ere XII.	SIGN	744	DATE
RECEIVED BY	PRINT		SIGN		DATE

**Each unit Must Be Marked on Sheet With All corresponding information Filled in * *

Emerald Transformer PPM, LLC- PCB CONTINUATION SHEET

4000 Mahoning Ave. Warren, OH

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			11	and the second
WORK	ORDER	NO:	المشهر محمدالة	41

DOCUMENT NO	o. 8675	95		STRAIGHT BILL	OF LADING			
TRANSPORTER	1 Emer	ald Trar	stomer	·	· · · · · · · · · · · · · · · · · · ·	VEHICLE ID	+ 413	
EPA ID#	_FLR	<u> </u>	6820		• • • • • • • • • • • • • • • • • • • •	TRANS. 1 PH	ONE	
TRANSPORTER	12		-			VEHICLE ID	ŧ	
EPA ID#	· ·		•			_ TRANS. 2 PH	ONE	
	; 32					-	· · · · · · · · · · · · · · · · · · ·	
DESIGNATED		ald Tra	nsformer	PPM, LLC	SHIPPER	Warren Stee	***	
FACILITY EPA					SHIPPER EPA			
ADDRESS	2 E. Highla	nd Rd			ADDRESS	according to the land of the l		
CITY	ısburg, OH	44087	STATE	ZIP	CITY	Warren, Ol	STATE 2	ZIP
CONTAINERS NO. & SIZE	TYPE	. НМ		DESCRIPTION	OF MATERIALS	3	TOTAL QUANTITY	UNIT WT/VOL
0/	SHOTT		A. N	ion DOT regulated	Material (miner	al pil)	19096	K
			B.		-			
		÷	C.					
			D.			e e e e e e e e e e e e e e e e e e e		
			E.		Manager 1		•	
			F.					,
			G.		• • •			
	,		H.					
SPECIAL HAN	4.5.5.6.6.6.5.6.5.6.6.6.6.6.6.6.6.6.6.6.	14:	ico Gact	111 OIL = 57 53 75-00 PE	TENEST 1485 Y	Jan &	,	
TE -17 3/14	751844	17 12	30 6111		· .		1 100 B	4-26-46

SHIPPER	PBINT Wolfe	USEPA	SIGN Wolf	DATE/26/18
TRANSPORTER 1	PRINT HARRY W POTTS O	12	SIGN NAUL WHOLE	DATE OH-26-18
TRANSPORTER 2	PRINT	5	SIGN	DATE
RECEIVED BY	PRINT		SIGN	DATE

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-13

DOCUMENT N	o. 867	321	٠	STRAIGHT BILL	OF LADING			
TRANSPORTE	R1 Eme	rald Tra	reform	er .	•	VEHICLE ID	+	04
EPA ID#	<u> </u>	?000 1	8820			TRANS. 1 PH	ONE	: · · · · · · · · · · · · · · · · · · ·
TRANSPORTE	R 2				**************************************	VEHICLE ID	‡ <u> </u>	, f
EPA ID#	; . 				•	TRANS. 2 PH	ONE	
DESIGNATED	•		nsform	erPPW, LLC	SHIPPER	Warren Stee	al .	
FACILITY EPA			,		SHIPPER EPA			
· · · · · · · · · · · · · · · · · · ·	2 E. Highla	and Rd			ADDRESS	4000 Mahoni	ng Ave.	
CITY	nsburg, Of	4 44087	STAT	E ZIP	CITY	Warren, Of	STATE :	ZIP
CONTAINERS NO. & SIZE	TYPE	НМ	' نید	DESCRIPTION	OF MATERIALS	3	TOTAL QUANTITY	UNIT WT/VOL
09	CM		A.	Non DOT regulated	Material (minera	oil)	4255	
02	DM		В.	MON DUT REGUE	TED MATERIAL		1 Part	
			C.		-		/ 7/	-
			D. =		:			
			E.			, 271		
			F.			-		
			G.					
			H.					4
SPECIAL HAN	IDLING IN	STRUCT	IONS	SEE CONTINUE	THE SHEET	rak umque	JO #5,	:

SHIPPER STORM LOOK	SIGN DATE/201/2
PRINT	SIGN DATE
TRANSPORTER 1 HAMON IN PORTS JR	Hand 1 Wall 8 08-26-18
PRINT	SIGN DATE
TRANSPORTER 2	
PRINT	SIGN DATE
RECEIVED BY	

Emerald Transform **Each unit Must B **THIS PAGE MUS	ner PPM, LLC. Re Marked on Sh	**Each unit Must Be Marked on Sheet With All corresponding infor**THIS PAGE MUST MATCH THE MANIEEST IT ACCOMPANIES	rmation	* * * * * * * * * * * * * * * * * * * *)			W-13	5
/ of /		GENERATOR LINERIAL STEPLE	coul.	RESTORATION / LIPPA MANIFEST#	VIFEST#	86732		· .	<i>,</i>
Manifest Unit Line Type	Unique Generator ID Number	Serial Number	Material Description	Out of Service K' Date	KVA Trans	Transformer LJ	LBS KGS	Full or Empty	PCB Level
W) -	76-347	22424	OCB	9-26-18		27	18/140	Fall	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
1 CM	T0-346	18/67		926 78		3000	4981 80		1355
1 000	TO 426	28025	20.8	9-92-6		3558	86/ 8c) BY
d CM	12 HIL	29/60	000	9-26-18		3208			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
CM	72428	2012	82	82926		46	46516 2116		100
M CM	12.17		Mist Exect Bowl	87926		Je)	600 273	3 FULL	
4 04	76-18	-		32926		12			15
A CM	72-15			9-26-18		, a			234
A CM	72-16		4	8+92-6	-	7			2027
								10	
B DM	- DMJ		DRUM SILICANEOIC	4-26-18		81	28/ 481	名名	DN
B DM	DM12		Ą			234	/	+	ON
	9.						19,		
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-								- /44-44	
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UNIL LYPES: DM = DRUM.METAL	ĀĹ	TRANSFORMER TYPE: POLE) in the state of	B Ü	B=BUSHING C=CAPACIT	B=BUSHING C =CAPACITOR D=DEBRIS		T =TRANSFORMER PAD	3.R
MATERIAL DESCRIPITOII: A-SWITCH, OCB, etc	RIPHOH: etc	DF = DRUM FIBER CM=C CW= CONTAINER WOOD	DF = DRUM FIBER CM=CONTAINER METAL EW= CONTAINER WOOD		0=01L		SUB	SUBSTATION	· · · · · · · · · · · · · · · · · · ·
									•• ••

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-14

TRANSPORTER	t 1 · Emera	id Tran	sformer			_ VEHICLE ID #	324	24
EPA ID#	FLR	0001	8020	-	· ·	_ TRANS. 1 PH	ONE	.f = 1, ., .
TRANSPORTER	R2		·		<u> </u>	VEHICLE ID #	<u> </u>	
EPA ID#				· ·		_ TRANS. 2 PH	ONE	
	•	• .		·				-
DESIGNATED	FACILITY Erner	ald Trai	isformer l	PPM, LLC	SHIPPER	Warren Stee	1	
FACILITY EPA	ID#				SHIPPER EPA	ND# OHROQDO	07773	
ADDRESS 167	2 E. Highla	nd Rd		·	ADDRESS	4000 Mahoni	ng Ave.	
CITY	isburg, OH	44087	STATE	ZIP	CITY	Warren, Ol	STATE I 44483	ZIP
CONTAINERS NO. & SIZE	TYPE	НМ	,	DESCRIPTION	N OF MATERIAL	S	TOTAL QUANTITY	UNIT WT/VOL
12,	CM		A. N	lon DOT regulated			1247	K
- Simeric			В.					
		-	C.					1. x/2.
		-	D.					
			E.		. ,			
			F.					
			G.					
			Н.		*			
SPECIAL HAN	DLING INS	,	IONS	CE CONTINU	itions por	VMQUE J	1 # 5	

SHIPPER	PRINT USE OSC	SIGN	DATE S/JY//S
TRANSPORTER 1	PRINT HAMMA WHOTESTR	SIGN KAMP (WPALL)	DATE OF 21-10
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT	SIGN	DATE

Enserald Transform	ner PPM, LLC	Emerald Transformer PPM, LLC-PCB CONTINUATION SHEET	SHEET			ه څښمه څوره			W5 74	
Each unit Must B	le Marked on S	**Each unit Must Be Marked on Sheet With All corresponding information Filled in * *	ding information Filled	in * *		* *********************************				
**THIS PAGE MUS	ST MATCH TH	PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES* *	APANIES* *		Bu	*	j. J.	···		1
) of /	ļ	GENERATOR: LAMOREN STEEL	57022	7	MANIFEST#		80156	V		
Manifest Unit	Unique		Material Pression	Out of	\$ 2	Transformer	00	000	Full or	1000
Number Type		Serial Nulliner	Material Description	Date	۲ ۲	Type	2	25	Empty	T C D Level
A ON	T0423	2842	OCB	9-1-18			3538	15951	FULL	NO V
	12-24	36548	772845				0427	773	hadmes	(Q)
	92-32	36547	T18615.				1,400	773	PUMPE	100
	77.25	87849	774015				1,700	773	BOTHER	7
	72-364	5696204	pr				0549	2332	FIGHT	80
	17-363	569203	pr				05400	2432	EMPT4	^ /
	598-21	569201	20				2456	1111	EMPT4	(PM
	77-362	585202	20				2450		FACRET	9
	61-22		Pace KTR				150	68	Fuch	Ser Ser
-	22-32				7		051	89		7
	72-21		4				051	89	4	~ PM
	72-3		pT				282	hll	Falk	100
7	70-14		7.0				250	1/4	4	
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							· · · · · · · · · · · · · · · · · · ·			
	-							12438	38 K	
								27-		
								,		-
,			-							
UNIT TYPES:		TRANSFORMER TYPE;	<u>国</u> ;		B=BUSHING	HING		T=TRA	T =TRANSFORMER	
DM = DRUM METAL	AL	POLE			C=CAF	C =CAPACITOR D=DEBRIS	EBRIS	PAD		
MATERIAL DESCRIPTIOII: A-SWITCH OCR LE	RIPHOII:	DE DRUM FIBER CM=CONTAINER METAL	1=CONTAINER META	ı,	0=01	Ni Washington ang Salat a	, e . ·	SUBSITATION	ATION	
	<u>ر</u>	CW-CONIAINER WOOD	d Or					٠.٠.	•.	

4000 Mahoning Ave. Warren, OH

WORK ORDER NO. WS-15

DOCUMENT N	6.8673	123		STRA	IGHT BILL	OF LADIN	i G			
TRANSPORTE	R1 Emer	ald Tran	sformer	,	٠.,	· :	<u> </u>	VEHICLE ID	# 3204	
EPA ID#	FLR	0001	6820			·. :		TRANS. 1 PI	IONE	· · · · · · · · · · · · · · · · · · ·
TRANSPORTE	R 2	· · ·	4 4 5	· .	· .		•	VEHICLE ID	#	· · · · · ·
EPA ID#	<u> </u>		•	•	-	·····	 -	TRANS. 2 PH	HONE	· ,
· · · · · · · · · · · · · · · · · · ·	* no.e1.	<i>,</i> .								,
DESIGNATED	Emer	ald Trai	nsformie	r PPW, L	LC	SHIPPEI		Warren Ste	€[
FACILITY EPA	\ ID #			Ć.		SHIPPE		D# DHROOO(007773	
	2 E. Highla	nd Re		ppiness on the		ADDRES	38	4000 Mahon	ing Ave.	
CITY	nsburg, OH	44097	STATE	ZI	P	CITY		Warren, Ol	STATE Z H 44483	ZIP
CONTAINERS NO. & SIZE	TYPE	нм	/	DE	SCRIPTION	OF MATE	ERIALS		TOTAL QUANTITY	UNIT WT/VOL
253	CM				T regulated	Second of the last		pil)	6900	K
6	CM		В. Д	ION COUT	* Kroma	tes. Wa	TERML		1364	K
			C.				,			
			D,							
•		,	E.		•	1	,			
			F.							-
			G.			,	-			
, ,		<u>-</u>	H.							
SPECIAL HAN	IDLING INS	TRUCTI			PACITALS USUMAS	, ,	SEE	LONGUE IL	THE SHOET	Feel
0.50 09-	27-18		*	y	- XINGAD	· · · · · · · · · · · · · · · · · · ·	The same of the sa			

			•	
	PRINT	USEPA	SIGN	DATE
SHIPPER STO	phon Wolfe	09.	L Work	9 127118
	PRINT	\mathcal{A}	SIGN	DATE
TRANSPORTER 1	HAMOUS M	16775, JR	Haw H WHAN	07-27-10
	PRINT		SIGN	DATE
TRANSPORTER 2			<i></i>	
	PRINT		SIGN	DATE
RECEIVED BY				

WS-15	Full or Empty PCB Level	Film periores	 Talk Roward	 								7,7-0			FORMER		
23	KGS	269	1364	2		7-71		 2.22	: :	 	 1				T =TRANSFORMER	PAD	SUBSTATION
867323	LBS	15,180	 3000	 												EBRIS	
Section 10 or a reconstruction of the section of th	Transformer Tvpe						·								0	ITOR D=D	
BU H MANIFESTH	KVA			-	.		·				 		-		B=BUSHING	C =CAPACITOR D=DEBRIS	<u>.</u>
	Out of Service Date	8112-6	9-27-18														,
nation Filled i	Material Description															ER METAL	
SHEET ding inform APANIES*	Material I	CAPACIDOS	Busines								-				red red	CONTAIN	Q.
Emerald Transformer PPM, LLC- PCB CONTINUATION SHEET **Each unit Must Be Marked on Sheet With All corresponding information Filled in ** **THIS PAGE MUST MATCH THE MANIFEST IT ACCOMPANIES* GENERATOR: LANGEN STARZ / DA / ER Manifort	Serial Number										 				TRANSFORMER TYPE:	DF = DRUM FIBER CM=CONTAINER METAL	CW≈ ÇONTAINER WOOD
C- PCB (Sheet W HE MAN				 -										311-21	TRAN	role; DF = D	O.W.
ner PPM, LL SE Marked on ST MATCH T	Generator ID Number	1-253	1-6													RIPHOK	ę.
ransforn it Must E NGE MU	-		 an											- - ;	M MFT	LDESC	, OCB, et
Emerald T **Each uni **THIS PA Pg / of	Line	*	α								-			10/14 Files	DM = DRIIM METAI	MATERIAL DESCRIPTION:	A-SWITCH, OCB, etc

APPENDIX E ENVIRONMENTALLY-PREFERRED PRACTICES

TDD #:	S05-0004-1807-203
Site Name:	Warren Steel Holdings
Site City, State:	Warren, Ohio
Site Project Manager:	Jackie Cole
EPA OSC:	Stephen Wolfe

Environmentally Preferro	ed Gene	eral Fie	ld Pra	ctices
If a general category is not applicable, then check N/A for the category box, not for each subcategory.	N= Not Used	N/A= Not Applicable	Y = Yes Implemented	Comments Section Justify in the comments for each BMP field as to why the practice was not used, not applicable, or implemented.
End	ergy			
Use of Energy Efficient Equipment				
Computer Equipment (FEMP/Energy Star)			Х	Energy Star laptops were utilized
Installation of Electric Service		х		U.S. Environmental Protection Agency (EPA) ERRS contractor responsible for on-site electricity.
Reduce Carbon Emissions from Transportation				
Use Internet Based Meetings/Conferences			х	Communicated through emails or phone conferences for project communication, as able.
Maximize Carpooling		x		Only one Tetra Tech employee on-site at a time, carpooling not applicable.
Use of Local Labor/Suppliers/Waste Disposal Facilities (50 mile radius)		х		U.S. Environmental Protection Agency (EPA) ERRS contractor responsible for labor, supplies, and waste disposal.
No idling, except for extreme weather conditions			х	Idling was not used, barring extreme weather conditions.
Use of Alternative Fuels, if available within 10 miles	х			Gas stations in the area did not have alternative fuels available.
Properly Inflated Tires			х	Tires were kept inflated and monitored for pressure.
Email Small Files (less than 8MB)			Х	Small files were emailed.
Reusable Electronic Storage Media or the Cloud			x	A electronic storage media device was used for file storage and communication.
Wa	ater			
Use of Low Flow Sampling Pumps		Х		Not necessary for scope of work.
V	Vaste			
Use of Local Recycling Programs			x	Recycling programs utilized through ERRS contractor.

Environmentally Preferre	ed Gene	eral Fie	ld Pra	ctices
If a general category is not applicable, then check N/A for the category box, not for each subcategory.	N= Not Used	N/A= Not Applicable	Y = Yes Implemented	Comments Section Justify in the comments for each BMP field as to why the practice was not used, not applicable, or implemented.
Use of Rechargeable Batteries			х	Rechargeable batteries were used for PDR-1500 particulate monitoring.
Recycling – Other		Х		Not applicable for scope of work.
Plastic Reduction			х	Plastic use was kept to a minimum.
Reuse of Resources		Х		Not applicable for scope of work.
Direct Push Boring		Х		Not applicable for scope of work.
Mate	erials			
Printing when Required				
Double-sided Printing			x	Tetra Tech utilized double-sided printing when printing from the office (on-site printing occurred through ERRS contractor).
100% post-consumer recycled paper			х	Tetra Tech utilized 100% post- consumer recycled paper, as able, when printing from the office.
Land & E	cosyster	ns		
Minimize Disruption to Natural Vegetation		Х		Not applicable for scope of work
Use of Non-invasive Investigation Techniques		Х		Not applicable for scope of work
Environme	ntally Pr	eferred		
Green Procurement				
Environmentally Preferred Vendors		х		Not applicable for scope of work
Green Lodging/Hotels			х	Green lodging was utilized, where applicable.
Use of Green Laboratories		х		Not applicable for scope of work; ERRS contractor procured laboratories for project duration.

TDD #:	S05-0004-1807-203
Site Name:	Warren Steel Holdings
Site City, State:	Warren, Ohio
Site Project Manager:	Jackie Cole
EPA OSC:	Stephen Wolfe

	Green Metrics	
Metric	Amount	Unit of Measure
Diesel Fuel Used	0	gallons
Distance Traveled ¹	385.00	Miles
Unleaded Fuel Used ²	14.64	gallons
Alternative/E-85 Fuel Used	0	gallons
Electricity from Coal	0	kW
Electricity from Natural Gas	0	kW
Electricity from solar/wind	0	kW
Electricity from grid/mix	0	kW
Solid waste reused	0	lbs
Solid waste recycled	0	lbs
Water Used	0	gallons

Greenhouse Gas Emissions (Site Specific)					
Source	Amount Used	Unit of Measure	Methane (CH4) (Grams) ³	Nitrous Oxide (N₂O) (Grams)³	Carbon Dioxide (CO2) (Kilograms) ³
Gasoline	14.64	X gallons	2.54	6.28	130.43
Diesel	0.00	X gallons			
E-85	0.00	X gallons			
Electricity Office	0.00	X Kilowatts			
Natural Gas	0.00	X Therms			
Solid Waste	0.00	X lbs			
Other	0.00	X Unit of Measure			

Note:

¹ Distance traveled based on number of trips between the Warren Steel Holdings site in Warren, Ohio and Tetra Tech's Cleveland and Detroit Offices (110 and 500 round-trip miles, respectively) in a mid-size or large sport utility vehicle, which was required for site conditions. A total of 38 trips were made by 1 Tetra Tech personnel totaling 4,460 miles.

² Fuel consumption based on distance traveled in a large sport utility vehicle. An average fuel efficiency of 27.3 miles per gallon was assumed based on 2015 light duty truck fuel efficiency from "Average Fuel Efficiency of U.S. Light Duty Vehicles," U.S. Department of Transportation, Bureau of Statistics Table 4-23 (Accessed online at https://www.bts.gov/sites/bts.dot.gov/files/docs/browse-statistical-products-and-data/national-transportation-statistics/217651/ntsentire2017q4.pdf on October 4, 2018).

³ Methane and nitrous oxide emissions based on emission factors of 0.0066 and 0.0163 grams per mile for EPA Tier 2 light duty gasoline trucks from "Voluntary Reporting of Greenhouse Gases Program, Fuel Emission Coefficients, Table 5" (Accessed online at http://205.254.135.7/oiaf/1605/coefficients.html on December 9, 2016)

⁴ Carbon dioxide emissions based on emission factors of 8.91 kilograms carbon dioxide per gallon of gasoline and 10.15 kilograms carbon dioxide per gallon of diesel fuel from "Voluntary Reporting of Greenhouse Gases Program, Fuel Emission Coefficients, Table 2" (Accessed online at http://205.254.135.7/oiaf/1605/coefficients.html on November 14, 2016).